VALLEY VIEW SUBDIVISION INC (PWS 2250065)
SOURCE WATER ASSESSMENT FINAL REPORT

March 27, 2003

State of Idaho
Department of Environmental Quality

Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. This assessment is based on a land use inventory of the designated source water assessment area and sensitivity factors associated with the well and aquifer characteristics.

This report, *Source Water Assessment for Valley View Subdivision, Idaho*, describes the public drinking water system, the boundaries of the zones of water contribution, and the associated potential contaminant sources located within these boundaries. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

Valley View Subdivision drinking water system consists of three groundwater wells. The wells are located east of Highway 12, near the city of Kamiah, Idaho. Well #3 is currently the system's main water source. The State Drinking Water Inventory System (SDWIS) has Well #1 and Well #2 as being inactive. However, both wells will be evaluated, because until they are completely decommissioned according to regulations, they have the potential to be used, and thus influence the quality of the system's water. The system currently serves approximately 125 people through 45 connections.

Final susceptibility scores are derived from equally weighing system construction scores, hydrologic sensitivity scores, and Potential Contaminant/Land Use scores. Therefore, a low rating in one or two categories coupled with a higher rating in other category (ies) results in a final rating of low, moderate, or high susceptibility. With the potential contaminants associated with most urban and heavily agricultural areas, the best score a well can get is moderate. Potential Contaminants/Land Uses are divided into four categories, inorganic contaminants (IOCs, i.e. nitrates, arsenic), volatile organic contaminants (VOCs, i.e. petroleum products), synthetic organic contaminants (SOCs, i.e. pesticides), and microbial contaminants (i.e. bacteria). As different wells can be subject to various contamination settings, separate scores are given for each type of contaminant.

In terms of total susceptibility, Well #1 rated moderate for IOCs and SOCs, and automatically high for VOCs and microbial contaminants. System construction rated moderate and hydrologic sensitivity rated high. Land use rated low for IOCs, VOCs, SOCs, and for microbials contaminants. The automatically high ratings are due to an April, 2000 detection of the VOC toluene and the microbial bacteria which has been detected in the well. If not for the automatically high ratings, Well #1 would have rated moderate for all potential contaminant categories.

In terms of total susceptibility, Well #2 rated moderate for IOCs, VOCs, and SOCs, and automatically high microbial contaminants. System construction rated high and hydrologic sensitivity rated moderate. Land use rated moderate for IOCs, VOCs, SOCs, and low for microbials contaminants. The automatically high microbial rating is due to detections of total coliform in Well #2.

In terms of total susceptibility, Well #3 rated moderate for IOCs, VOCs, SOCs, and microbial contaminants. System construction and hydrologic sensitivity rated moderate. Land use rated moderate for IOCs, VOCs, SOCs, and low for microbials contaminants.

No SOCs have ever been detected in the wells. The detected IOCs with potential health risks were arsenic, barium, nitrate, and fluoride, however, concentrations were significantly below maximum contaminant levels (MCLs) as set by EPA. The IOC sodium was also detected in the water. Total coliform was detected six times (twice in June 1994, July 1994, August 1996, October 1998, and July 2000) in Well #1, and three times (twice in June 1994, and July 1994) in Well #2. In addition, total coliform was detected four times in the distribution system (October 1998, August 2000, March 2001, and June 2001). No bacteria has been detected in Well #3.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources. If the system should need to expand in the future, new well or spring sites should be located in areas with as few potential sources of contamination as possible, and the site should be reserved and protected for this specific use.

For the Valley View Subdivision, drinking water protection activities should first focus on correcting any deficiencies outlined in the sanitary survey (an inspection conducted every five years with the purpose of determining the physical condition of a water system's components and its capacity). Actions should be taken to keep a 50-foot radius circle clear of all potential contaminants from around the wellheads. Any contaminant spills within the delineations should be carefully monitored and dealt with. As much of the designated protection areas are outside the direct jurisdiction of the Valley View Subdivision, collaboration and partnerships with state and local agencies, and industry groups should be established and are critical to the success of drinking water protection. In addition, the well should maintain sanitary standards regarding wellhead protection.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. For assistance in developing protection strategies please contact the Lewiston Regional Office of the Idaho Department of Environmental Quality or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR VALLEY VIEW SUBDIVISION, KAMIAH, IDAHO

Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the rankings of this assessment mean.** Maps showing the delineated source water assessment area and the inventory of significant potential sources of contamination identified within that area are attached. The list of significant potential contaminant source categories and their rankings used to develop the assessment is also included.

Background

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area and sensitivity factors associated with the wells and aquifer characteristics.

Level of Accuracy and Purpose of the Assessment

Since there are over 2,900 public water sources in Idaho, there is limited time and resources to accomplish the assessments. All assessments must be completed by May of 2003. An in-depth, site-specific investigation of each significant potential source of contamination is not possible. **Therefore, this assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

The ultimate goal of the assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. The Idaho Department of Environmental Quality (DEQ) recognizes that pollution prevention activities generally require less time and money to implement than treatment of a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The local community, based on its own needs and limitations, should determine the decision as to the amount and types of information necessary to develop a drinking water protection program. Wellhead or drinking water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

Valley View Subdivision drinking water system consists of three groundwater wells. The wells are located east of Highway 12, near the city of Kamiah, Idaho. Well #3 is currently the system's main water source. The State Drinking Water Inventory System (SDWIS) has Well #1 and Well #2 as being inactive. However, both wells will be evaluated, because until they are completely decommissioned according to regulations, they have the potential to be used, and thus influence the quality of the system's water. The system currently serves approximately 125 people through 45 connections.

No SOCs have ever been detected in the wells. The detected IOCs with potential health risks were arsenic, barium, nitrate, and fluoride, however, concentrations were significantly below MCLs as set by EPA. The IOC sodium was also detected in the water. Total coliform was detected six times (twice in June 1994, July 1994, August 1996, October 1998, and July 2000) in Well #1, and three times (twice in June 1994, and July 1994) in Well #2. In addition, total coliform was detected four times in the distribution system (October 1998, August 2000, March 2001, and June 2001).

Defining the Zones of Contribution – Delineation

The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the zone of contribution into time-of-travel (TOT) zones (zones indicating the number of years necessary for a particle of water to reach a well) for water in the aquifer. DEQ contracted with the University of Idaho to perform the delineations using a refined computer model approved by the EPA in determining the 3-year (Zone 1B), 6-year (Zone 2), and 10-year (Zone 3) TOT for water associated with the aquifer of the Clearwater Uplands in the vicinity of the Valley View Subdivision wells. The computer model used site specific data, assimilated by the University of Idaho from a variety of sources including operator input, local area well logs, and hydrogeologic reports (detailed below).

Hydrogeologic Setting

The conceptual hydrogeologic model for the Valley View Subdivision source wells south of Kamiah, Idaho is based on interpretation of available well logs and a published geologic map. The source well logs indicate water is derived from sand for Well 1 and basalt for Wells 2 and 3. Bedrock geology is based on the geologic maps of the Hamilton quadrangle and Pullman quadrangle at a scale of 1:250,000 (Rember and Bennett, 1979). Geology of the area is quite complex with northwest-southeast trending structural features to the east of Kamiah.

Figure 1 shows the location of the sources. The ground elevation is approximately 1350 feet above mean sea level (msl) at the source well. Discharge from the source wells is approximately 75 gpm for Well 1 and 30 gpm for Well 2. Well 3's discharge is unknown. Little information is known about the hydrogeology of the area.

Neighboring private wells were used for test points in the WhAEM simulations. Information on test points was obtained from a search of the Idaho Department of Water Resources database available on the internet. The locations of the test points are limited to information supplied on well logs, typically the quarter-quarter section (0.0625 mile^2). Therefore, the accuracy of the test point elevation and the static water elevation is dependent upon the accuracy of the driller's log and the topographic relief in the quarter-quarter section.

The capture zones delineated herein are based on limited data and must be taken as best estimates. If more data become available in the future these delineations should be adjusted based on additional modeling incorporating the new data.

The delineated capture zone for Well #1 can best be described as a north northeast trending lobe approximately 1500 feet long and 1000 feet wide (Figure 2). Well #2 and Well #3's delineation can best be described as a north northeast trending sector approximately 2.25 miles long which widens to approximately 0.75 miles (Figure 2).

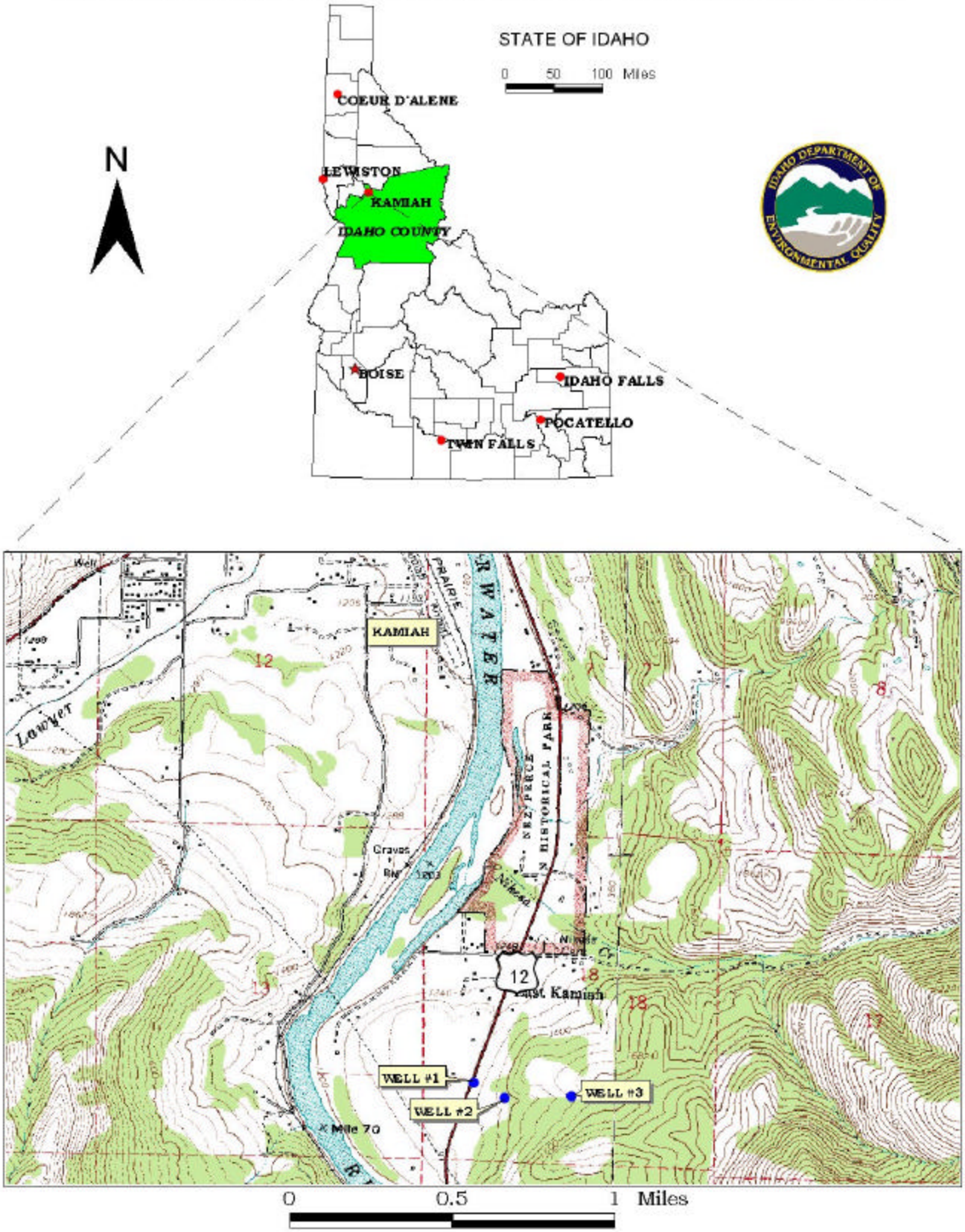
Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of groundwater contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by DEQ and from available databases.

Land use within the immediate area and the surrounding area of the Valley View Subdivision sources contains some urban activity, however most of the delineation exists within undeveloped range land or woodland. The urban activities include one transportation corridor (Highway 12). In addition, Nikesa Creek was considered as a source of potential contaminants.

It is important to understand that a release may never occur from a potential source of contamination provided they are using best management practices. Many potential sources of contamination are regulated at the federal level, state level, or both to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination, including educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply well.

FIGURE 1. Geographic Location of Valley View Subdivision Inc



Contaminant Source Inventory Process

A two-phased contaminant inventory of the study area was conducted in November and December 2002. The first phase involved identifying and documenting potential contaminant sources within the Valley View Subdivision source water assessment areas (Figure 2 and 3, and Table 1 and 2) through the use of computer databases and Geographic Information System (GIS) maps developed by DEQ. The second, or enhanced, phase of the contaminant inventory involved contacting the operator to identify and add any additional potential sources in the area. No additional potential contaminant sources were identified by the system's operator.

The delineated source water assessment areas of the Valley View Subdivision wells are intersected by Highway 12 and Nikesa Creek. These sources can contribute leachable contaminants to the aquifer in the event of an accidental spill, release, or flood.

Table 1. Valley View Subdivision, Well #1, Potential Contaminant/Land Use Inventory.

Site	Description of Source	TOT[1] Zone	Source of Information	Potential Contaminants[2]
	Highway 12	0 – 10 YR	GIS Map	IOC, VOC, SOC, Microbial

[1] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead

[2] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

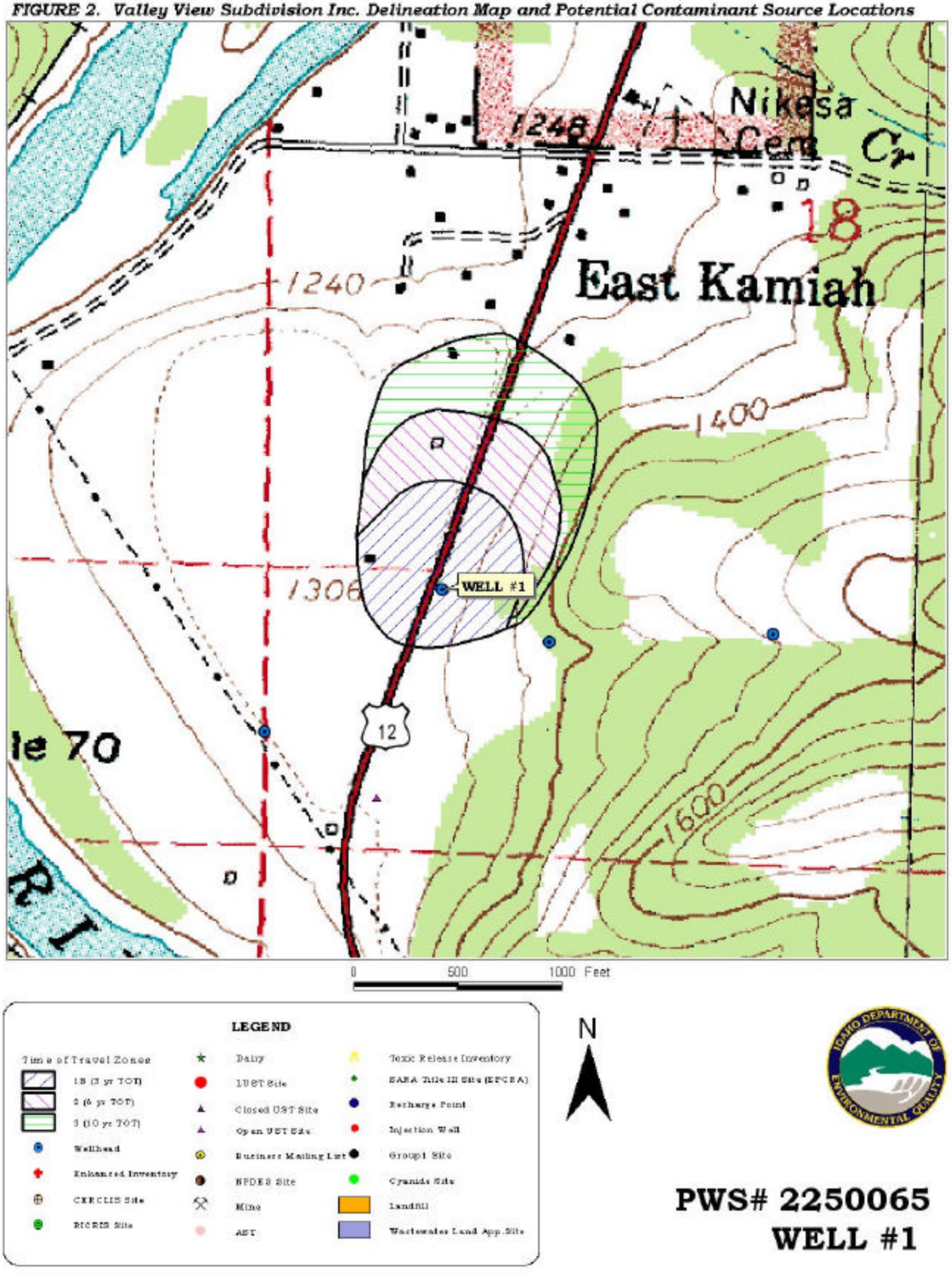
Table 2. Valley View Subdivision, Well #2 and Well #3, Potential Contaminant/Land Use Inventory.

Site	Description of Source	TOT[1] Zone	Source of Information	Potential Contaminants[2]
	Nikesa Creek	0-10 YR	GIS Map	IOC, VOC, SOC, Microbial

[1] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead

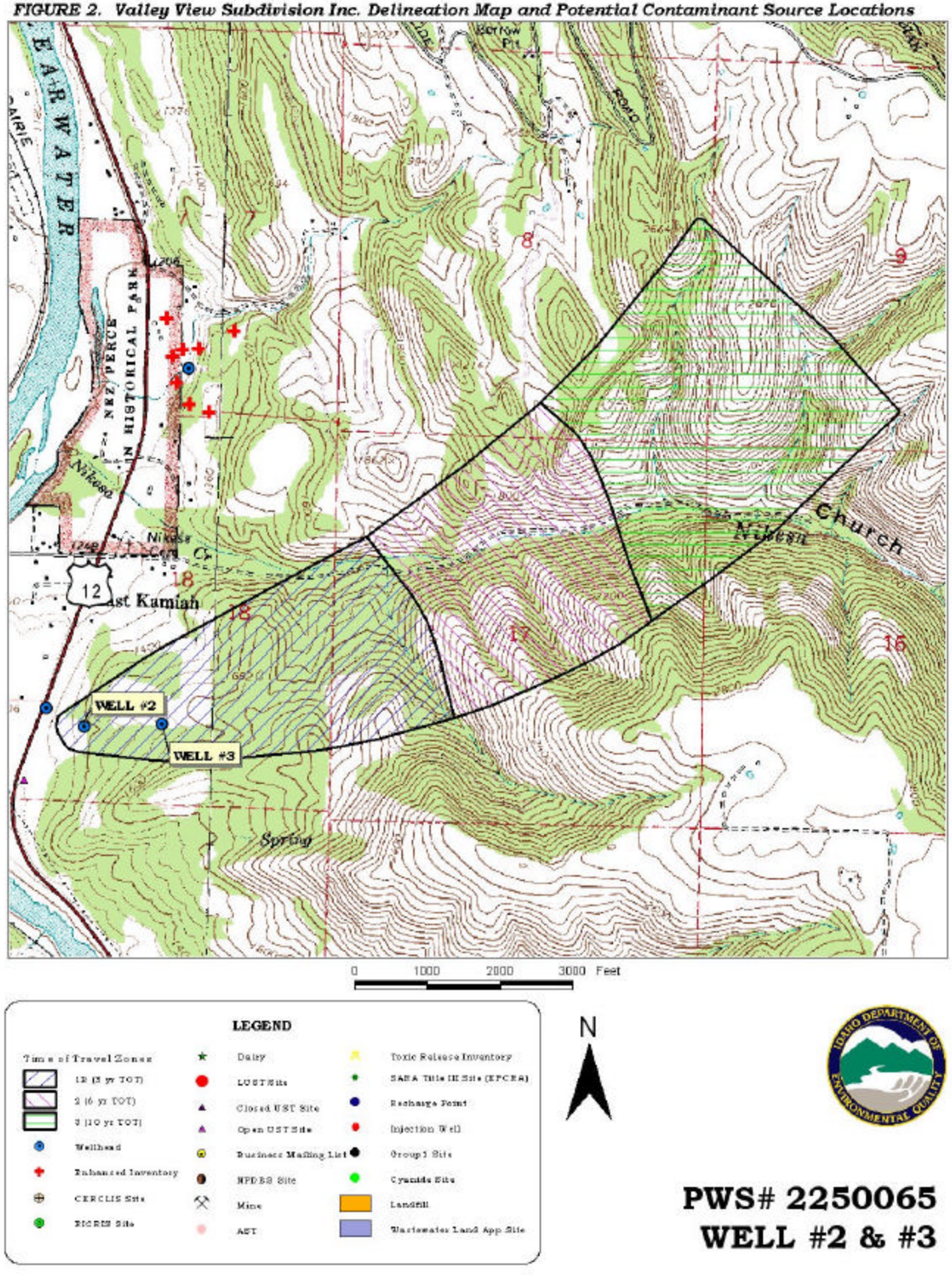
[2] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

FIGURE 2. Valley View Subdivision Inc. Delineation Map and Potential Contaminant Source Locations



PWS# 2250065
WELL #1

FIGURE 2. Valley View Subdivision Inc. Delineation Map and Potential Contaminant Source Locations



PWS# 2250065
WELL #2 & #3

Section 3. Susceptibility Analyses

Each well or spring's susceptibility to contamination was ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity of the well, land use characteristics, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well or spring is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. Appendix A contains the susceptibility analysis worksheets for the system. The following summaries describe the rationale for the susceptibility ranking.

Hydrologic Sensitivity

The hydrologic sensitivity of a well is dependent upon four factors: the surface soil composition, the material in the vadose zone (between the land surface and the water table), the depth to first ground water, and the presence of a 50-foot thick fine-grained zone (aquitard) above the producing zone of the well. Slowly draining soils such as silt and clay typically are more protective of ground water than coarse-grained soils such as sand and gravel. Similarly, fine-grained sediments in the subsurface and a water depth of more than 300 feet protect the ground water from contamination.

Hydrologic sensitivity rated high for Well #1, and moderate for Well #2 and Well #3. Soils surrounding Well #2 and Well #3 are considered poorly- to moderately-drained by the Natural Resource Conservation Service (NRCS), positively affecting the score, however the soil surrounding Well #1 is considered moderately- to highly drained. In each of the three wells, the vadose zones are composed of permeable materials, the water table depth is less than 300 feet in each well, and the are not aquitards above the producing zones of each well.

Well Construction

Well construction directly affects the ability of the well to protect the aquifer from contaminants. System construction scores are reduced when information shows that potential contaminants will have a more difficult time reaching the intake of the well. Lower scores imply a system is less vulnerable to contamination. For example, if the well casing and annular seal both extend into a low permeability unit, then the possibility of contamination is reduced and the system construction score goes down. If the highest production interval is more than 100 feet below the water table, then the system is considered to have better buffering capacity. If the wellhead and surface seal are maintained to standards, as outlined in sanitary surveys, then contamination down the well bore is less likely. If the well is protected from surface flooding and is outside the 100-year floodplain, then contamination from surface events is reduced. A sanitary survey was conducted in 2000 for the system.

Well #1 rated moderate for system construction. The well was constructed in 1971. It is 397 feet deep with a 6-inch casing (0.250 inches thick) extending from ground level to 156 feet below ground surface (bgs) and a 5-inch casing (0.288 inches thick) extending from 153 feet bgs to 381 feet bgs. The 6-inch casing extends into gray clay, while the 5-inch casing extends into fractured shale. Torch cut perforations exist between 153 feet bgs and 381 feet bgs. A cement grout annular seal extends 125 feet bgs into river gravel. The water table is at 180 feet bgs. According to the 1989 sanitary survey, the wellhead and surface seal appear to maintained and in good condition. The rating was negatively influenced by an annular seal and 5-inch casing which do not extend into a low permeability units, a highest production which comes from less than 100 feet below static water levels, and a casing thickness which does not meet current construction standards.

Well #2 rated moderate for system construction. The well was constructed in 1978. It is 280 feet deep with an 8-inch casing of unknown thickness extending from ground level to 215 feet bgs into a broken basalt layer. The water table is at 60 feet bgs and the water producing zone is a shale layer from 210 feet bgs to 260 feet bgs. The moderate score was derived from the following: The well is located outside of the 100 year floodplain and its highest production is more than 100 feet below the water table. The annular seal extends to an unknown depth and the casing does not extend into a low permeability unit. The 1989 Sanitary Survey makes not mention of a vent on an otherwise maintained surface seal and wellhead.

Well #3 rated moderate for system construction. The well was constructed 2000. It is 340 feet deep with an 8-inch casing (0.322 inches thick) extending from the surface to 168 feet bgs into basalt and a 6-inch casing (.250 inches thick) extending from ground level to 296 feet bgs into tan shale. Factory-cut perforations exist between 238 feet bgs and 278 feet bgs. A cement grout annular seal extends 20 feet bgs into basalt. The water table is at 130 feet bgs. The moderate score was derived from the following: The well is located outside of the 100 year floodplain and its highest production is more than 100 feet below the water table. The casings and annular seal do not extend into low permeability units, and because no sanitary survey has been done since this well was constructed, it is unknown if the wellhead and surface seal are maintained.

Though the wells may have been in compliance with standards when they were completed, current PWS well construction standards are more stringent. The Idaho Department of Water Resources *Well Construction Standards Rules* (1993) require all PWSs to follow DEQ standards as well. IDAPA 58.01.08.550 requires that PWSs follow the *Recommended Standards for Water Works* (1997) during construction. These standards include provisions for well screens, pumping tests, and casing thicknesses to name a few. Table 1 of the *Recommended Standards for Water Works* (1997) lists the required steel casing thickness for various diameter wells. An 8-inch casing requires a 0.322 inch thickness and a 6-inch casing should be 0.280 inches thick. Because some of this information is unknown, the wells were assessed an additional point in the system construction rating.

Potential Contaminant Source and Land Use

Well #1 rated low for IOCs (i.e. nitrates, arsenic), VOCs (i.e. petroleum products), SOCs (i.e. pesticides), and for microbials. Well #2 and Well #3 rated moderate for IOCs, VOCs, SOCs, and low for microbials. Idaho County is considered to have medium herbicide and agricultural chemical usage. In addition, one transportation corridor (Highway 12), and Nikesa Creek intersect the delineations for Well #2 and Well #3. The low number and location of potential contaminant sources within the delineations contributed to the favorable land use scores.

Final Susceptibility Ranking

An IOC detection above a drinking water standard MCL, any detection of a VOC or SOC, or a detection of total coliform bacteria or fecal coliform bacteria at the wellhead will automatically give a high susceptibility rating to a well despite the land use of the area because a pathway for contamination already exists. In this case Well #1 rated automatically high for VOCs due to a detection of toluene in the well and both Well #1 and Well #2 received an automatically high susceptibility for microbials due to detections of total coliform in the wells. Hydrologic sensitivity and system construction scores are heavily weighted in the final scores. Having multiple potential contaminant sources in the 0 to 3-year time of travel zone (Zone 1B) and agricultural land contribute greatly to the overall ranking.

Table 3. Summary of Valley View Subdivision Susceptibility Evaluation

Well	Susceptibility Scores[1]									
	Hydrologic Sensitivity	Contaminant Inventory				System Construction	Final Susceptibility Ranking			
		IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
Well #1	H	L	L	L	L	M	M	H*	M	H**
Well #2	M	M	M	M	L	M	M	M	M	H**
Well #3	M	M	M	M	L	M	M	M	M	M

[1]H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility,
IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical
H* = Automatic high susceptibility due to detection of tolune in Well #2
H = Automatic high susceptibility due to detections of total coliform in the well**

Susceptibility Summary

Valley View Subdivision drinking water system consists of three groundwater wells. The wells are located east of Highway 12, near the city of Kamiah, Idaho. Well #3 is currently the system's main water source. SDWIS has Well #1 and Well #2 as being inactive. However, both wells will be evaluated, because until they are completely decommissioned according to regulations, they have the potential to be used, and thus influence the quality of the system's water. The system currently serves approximately 125 people through 45 connections.

In terms of total susceptibility, Well #1 rated moderate for IOCs and SOCs, and automatically high for VOCs and microbial contaminants. System construction rated moderate and hydrologic sensitivity rated high. Land use rated low for IOCs, VOCs, SOCs, and for microbials contaminants. The automatically high ratings are due to an April, 2000 detection of the VOC toluene and the multiple microbial bacteria detections in the well. If not for the automatically high ratings, Well #1 would have rated moderate for all potential contaminant categories.

In terms of total susceptibility, Well #2 rated moderate for IOCs, VOCs, and SOCs, and automatically high microbial contaminants. System construction rated high and hydrologic sensitivity rated moderate. Land use rated moderate for IOCs, VOCs, SOCs, and low for microbials contaminants. The automatically high microbial rating is due to detections of total coliform in Well #2.

In terms of total susceptibility, Well #3 rated moderate for IOCs, VOCs, SOCs, and microbial contaminants. System construction and hydrologic sensitivity rated moderate. Land use rated moderate for IOCs, VOCs, SOCs, and low for microbials contaminants.

Section 4. Options for Drinking Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

For the Valley View Subdivision, drinking water protection activities should first focus on correcting any deficiencies outlined in the sanitary survey. The 50 foot sanitary setbacks should continue to be kept clear of potential contaminants. As much of the designated protection areas are outside the direct jurisdiction of the Valley View Subdivision, collaboration and partnerships with state and local agencies, and industry groups should be established and are critical to the success of drinking water protection. In addition, the well should maintain sanitary standards regarding wellhead protection.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. A strong public education program should be a primary focus of any drinking water protection plan as the delineation encompasses urban and commercial land uses. Public education topics could include hazardous waste disposal methods and the importance of water conservation to name but a few. There are multiple resources available to help communities implement protection programs, including the Drinking Water Academy of the EPA.

A system must incorporate a variety of strategies in order to develop a comprehensive drinking water protection plan, be they regulatory in nature (i.e. zoning, permitting) or non-regulatory in nature (i.e. good housekeeping, public education, specific best management practices). For assistance in developing protection strategies please contact the Lewiston Regional Office of the DEQ or the Idaho Rural Water Association.

Assistance

Public water supplies and others may call the following DEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the DEQ office for preliminary review and comments.

Lewiston Regional DEQ Office (208) 799-4370

State DEQ Office (208) 373-0502

Website: http://www.deq.state.id.us

Water suppliers serving fewer than 10,000 persons may contact Melinda Harper, mlharper@idahoruralwater.com, Idaho Rural Water Association, at 208-343-7001 for assistance with drinking water protection (formerly wellhead protection) strategies.

POTENTIAL CONTAMINANT INVENTORY
LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ASuperfund≅ is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5 mg/L.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.

References Cited

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Appendix A

Valley View Subdivision, Inc.

Susceptibility Analysis Worksheets

Formulas used to determine Susceptibility Analysis Final Scores

Formula for Well Sources

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.375)

Final Susceptibility Scoring:

0 - 5 Low Susceptibility
6 - 12 Moderate Susceptibility
≥ 13 High Susceptibility

Ground Water Susceptibility Report Public Water System Name : VALLEY VIEW SUBD INC Well# : WELL #1 HILLS W
Public Water System Number 2250065 01/28/2003 2:50:14 PM

1. System Construction		SCORE				
Drill Date	03/15/1971					
Driller Log Available	YES					
Sanitary Survey (if yes, indicate date of last survey)	YES	1989				
Well meets IDWR construction standards	NO	1				
Wellhead and surface seal maintained	YES	0				
Casing and annular seal extend to low permeability unit	NO	2				
Highest production 100 feet below static water level	NO	1				
Well located outside the 100 year flood plain	YES	0				
Total System Construction Score		4				
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained	NO	2				
Vadose zone composed of gravel, fractured rock or unknown	YES	1				
Depth to first water > 300 feet	NO	1				
Aquitard present with > 50 feet cumulative thickness	NO	2				
Total Hydrologic Score		6				
3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score	
Land Use Zone 1A	RANGELAND, WOODLAND, BASALT	0	0	0	0	
Farm chemical use high	NO	0	0	0		
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES	NO	YES	NO	YES	
Total Potential Contaminant Source/Land Use Score - Zone 1A		0	0	0	0	
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)	YES	1	1	1	1	
(Score = # Sources X 2) 8 Points Maximum		2	2	2	2	
Sources of Class II or III leacheable contaminants or	YES	1	1	1		
4 Points Maximum		0	0	0		
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0	
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone 1B		3	3	3	2	
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present	YES	2	2	2		
Sources of Class II or III leacheable contaminants or	YES	1	1	1		
Land Use Zone II	Less than 25% Agricultural Land	0	0	0		
Potential Contaminant Source / Land Use Score - Zone II		3	3	3	0	
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present	YES	1	1	1		
Sources of Class II or III leacheable contaminants or	YES	1	1	1		
Is there irrigated agricultural lands that occupy > 50% of	NO	0	0	0		
Total Potential Contaminant Source / Land Use Score - Zone III		2	2	2	0	
Cumulative Potential Contaminant / Land Use Score		8	8	8	2	
4. Final Susceptibility Source Score		12	12	12	11	
5. Final Well Ranking		Moderate	High	Moderate	High	

Ground Water Susceptibility Report Public Water System Name : VALLEY VIEW SUBD INC Well# : WELL #2 HWY W
Public Water System Number 2250065 01/28/2003 3:58:48 PM

1. System Construction		SCORE				
Drill Date	1978					
Driller Log Available	NO					
Sanitary Survey (if yes, indicate date of last survey)	YES	1989				
Well meets IDWR construction standards	NO	1				
Wellhead and surface seal maintained	NO	1				
Casing and annular seal extend to low permeability unit	NO	2				
Highest production 100 feet below static water level	YES	0				
Well located outside the 100 year flood plain	YES	0				
Total System Construction Score		4				

2. Hydrologic Sensitivity						
Soils are poorly to moderately drained	YES	0				
Vadose zone composed of gravel, fractured rock or unknown	YES	1				
Depth to first water > 300 feet	NO	1				
Aquitard present with > 50 feet cumulative thickness	NO	2				
Total Hydrologic Score		4				

3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	RANGELAND, WOODLAND, BASALT	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES	NO	YES	NO	YES
Total Potential Contaminant Source/Land Use Score - Zone 1A		0	0	0	0
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	YES	1	1	1	1
(Score = # Sources X 2) 8 Points Maximum		2	2	2	2
Sources of Class II or III leacheable contaminants or	YES	1	1	1	
4 Points Maximum		0	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		3	3	3	2
Potential Contaminant / Land Use - ZONE II					
Contaminant Sources Present	YES	2	2	2	
Sources of Class II or III leacheable contaminants or	YES	1	1	1	
Land Use Zone II	Less than 25% Agricultural Land	0	0	0	
Potential Contaminant Source / Land Use Score - Zone II		3	3	3	0
Potential Contaminant / Land Use - ZONE III					
Contaminant Source Present	YES	1	1	1	
Sources of Class II or III leacheable contaminants or	YES	1	1	1	
Is there irrigated agricultural lands that occupy > 50% of	NO	0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III		2	2	2	0
Cumulative Potential Contaminant / Land Use Score		8	8	8	2
4. Final Susceptibility Source Score		10	10	10	10
5. Final Well Ranking		Moderate	Moderate	Moderate	High

Ground Water Susceptibility Report Public Water System Name : VALLEY VIEW SUBD INC Well# : WELL #3
Public Water System Number 2250065 01/28/2003 3:58:48 PM

1. System Construction		SCORE			
Drill Date	4/14/2000				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES	1989			
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	NO	1			
Casing and annular seal extend to low permeability unit	NO	2			
Highest production 100 feet below static water level	YES	0			
Well located outside the 100 year flood plain	YES	0			
Total System Construction Score		5			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	YES	0			
Vadose zone composed of gravel, fractured rock or unknown	YES	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
Total Hydrologic Score		4			
3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	RANGELAND, WOODLAND, BASALT	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		0	0	0	0
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	YES	1	1	1	1
(Score = # Sources X 2) 8 Points Maximum		2	2	2	2
Sources of Class II or III leacheable contaminants or	YES	1	1	1	
4 Points Maximum		0	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		3	3	3	2
Potential Contaminant / Land Use - ZONE II					
Contaminant Sources Present	YES	2	2	2	
Sources of Class II or III leacheable contaminants or	YES	1	1	1	
Land Use Zone II	Less than 25% Agricultural Land	0	0	0	
Potential Contaminant Source / Land Use Score - Zone II		3	3	3	0
Potential Contaminant / Land Use - ZONE III					
Contaminant Source Present	YES	1	1	1	
Sources of Class II or III leacheable contaminants or	YES	1	1	1	
Is there irrigated agricultural lands that occupy > 50% of	NO	0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III		2	2	2	0
Cumulative Potential Contaminant / Land Use Score		8	8	8	2
4. Final Susceptibility Source Score		11	11	11	11
5. Final Well Ranking		Moderate	Moderate	Moderate	Moderate